DOCUMENT RESUME

ED 022 559 PS 001 252

By-Garfunkel, Frank

HEAD START EVALUATION AND RESEARCH CENTER, BOSTON UNIVERSITY. REPORT A-III, OBSERVATIONAL STRATEGIES FOR OBTAINING DATA ON CHILDREN AND TEACHERS IN HEAD START CLASSES. (OSOD).

Boston Univ., Mass.

Spons Agency-Office of Economic Opportunity, Washington, D.C.

Pub Date 1 Sep 67

Note-30p.

EDRS Price MF-$0.25 HC-$1.28

Descriptors-*BEHAVIOR RATING SCALES, CLASSROOM COMMUNICATION, *CLASSROOM RESEARCH, CURRICULUM EVALUATION, FILMS, MEASUREMENT INSTRUMENTS, *OBSERVATION, PEER RELATIONSHIP, PRESCHOOL CHILDREN, PRESCHOOL TEACHERS, PROGRAM EVALUATION, *RESEARCH PROJECTS, *STUDENT TEACHER RELATIONSHIP, TEACHING STYLES

Identifiers-*Head Start

With the purpose of obtaining relevant data about the curriculum, classroom, teacher, and peer effects on individual Head Start children, this project plans to have trained observers spend several hours in the classroom (1) attending to and recording the total functions of the class and (2) attending to and recording the behavior of individual children. A comprehensive, somewhat complex, system of rating teacher-child behavior and classroom activities has been devised to record the data. Exploratory observation and training of observers will precede the primary data gathering project. There are plans to film the classrooms being observed in order to reconsider as a whole what the observers, by their rating scales, pulverize into many pieces of data. The analysis of the data will be directed towards developing specific predictions for individual children, classes, and clusters of classes regarding effects of various kinds of programs on children. (WD)

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

September 1, 1967

Frank Garfunkel
Boston University.

Head Start Evaluation and Research Center
Boston University

OBSERVATIONAL STRATEGIES FOR OBTAINING DATA ON CHILDREN AND TEACHERS IN HEAD START CLASSES (OSOD)

Curriculum

Classroom organization

Teacher style

Child reactions

Communication patterns

Acknowledgement

These instruments were developed with the active cooperation of Dr. Carolyn Stern, Director, U.C.L.A. Head Start Evaluation and Research Center and her staff, and drew heavily on instruments that had been developed, or partially developed in Head Start E. & R. Centers at U.C.L.A., Banks Street College of Education, University of Texas and Boston University.

ED022559

FS001252

TABLE OF CONTENTS

INTRODUCTION 2

STRATEGIES 4

Instructions for recording
CURRICULUM PROTOCOL
Class 6
Child 11
BEHAVIOURAL CATEGORIES 12
TIME VARIABLES 13
TEACHER-BEHAVIOURAL STYLE 13

CURRICULUM PROTOCOL 15

Key for CURRICULUM PROTOCOL 16

BEHAVIOURAL PROTOCOL 19

TIME VARIABLES PROTOCOL 19

TEACHER BEHAVIOURAL STYLE PROTOCOL 20

BEHAVIOURAL CATEGORY SCALES 21

TIME VARIABLES SCALES 22

Time allotments and sample size for teacher, class and curriculum observation
CURRICULUM PROTOCOL 23
Individual child observation 23

Exploratory observation and training 26

Selection of observers 27

Analysis of observational data 27

INTRODUCTION

The instruments to be described herein have been developed to obtain relevant data about the curriculum, classroom, teacher and peer effects on individual Head Start children. The techniques were developed to study seemingly important sources of variation. Since the latter dominated the former, there are a variety of methods employed, each of which would appear to be most suitable for studying a corresponding parameter. Therefore, methodologies vary according to the nature of the variable being measured.

No single strategy will satisfy the diversity of situations, teachers, methods, classroom organizations, adult interactions and activities to be found in Head Start and other levels and kinds of classrooms. Following around teachers might be appropriate in some cases but, too often, the teacher might have two rooms, administrative duties, or perform special functions in the classroom which would not lead to comparability. Observing the whole class prevents attention to important details of individual interactions between children and between teachers and children. Selecting the seemingly important incidents that come to the attention of observers is fraught with several kinds of biases - those due to importance and selectivity. Furthermore, it has become more and more apparent that we should be directly attending to the impact of adults in the classroom as they come in contact with children. On the other hand, we cannot ignore the organization and substance of the class.

Therefore, a dual strategy has been developed. There is, admittedly, a gap. The curriculum protocol, when used with the total class, can only go so far and it has been pushed to its limit. Following individual children around can be disconcerting to the observer because of a concern for behaviours that are observed but cannot be recorded.

At any rate, unbiased sampling, over time, should give best estimates for individual children (so that this might be considered as a factor in the change of individual children over time) and also, the ratings and times can be accumulated over children in a given class so that we can have central tendency measures for the class with respect to the accumulation of individual behaviours of children vis-a-vis teachers and other children.

The important thing to see, in order to understand the power of the instrument, are the ways in which two, three and four scales can be interrelated in order to get at more complex effects.

The most critical scales (process focus and control) are crucial to both strategies so they must be clearly understood by the observer. They will, of course, be controlled by other scales (participation which will be mediated by child behaviour and teacher style).

The strategy does not preclude the use of anecdotal reports. Once an observer has mastered the system (gains fluency) recording will be done in a matter of seconds and there will be more than enough time to take notes on individuals and classroom situations. Readers can fill out protocols from the anecdotal report and disparities can be studied.

Validity

We have several questions: Do the scales have face (or construct) validity? Do they include important variables that do make a difference? Is the content sufficient to differentiate quality from mediocrity? Are there any important ommissions which would prevent the scales from giving a valid estimate of potential impact?

This is being done by having individuals with diverse views review the content and discuss it. It also can be done conjecturely by comparing the content of the scales (in terms of second order interactions - taking two

and three variables at a time) to hypothetically superior and inferior classes, including those that may not fit any given model in all respects.

Empirical validation will not be possible in any short period of time. However, an empirical test of the internal validity of the scales is necessary if they are to be used on any large scale. This involves using multiple observers in at least twenty classes.

Strategies

There are two tasks to be done in order to complete these scales:

1. Observer (O) spends one, two or three hours in classroom, on two, three, or four separate days, attending to total functions of class. Two entries are made every five minutes, which approximates two and one half minutes per entry, but it leaves the observer some flexibility. All teachers, aides, volunteers and student teachers are observed working (or not working) with all children. The aim of this is to get at classroom organization and curriculum. In addition to the time dimension, the number of children in any given activity is a basic dimension.

2. Observer spends one, two or three hours in classroom and attends to one child at a time for periods of ten minutes. Each child is observed on two, three or four separate days. Entries are made every thirty seconds; at the end of ten minutes seven judgments are made regarding selected teacher characteristics. The thirty-second entries include category ratings (5) and the recording of the presence of three behaviours.

Protocols and coding sheets are notated with letters and subscripts so that it will make it easy to refer to them. An index of protocols and keys follows (see pp. 14-21):

A. Curriculum Protocol for 20 minute observation of class. Three of these will be needed for each hour of observation. This is used for recording activities of total class and also, but by a different observer, for recording activities of individual child when he is observed for ten minute segments.

B. Key for scoring A when used either for toal class, or for individual child. B consists of three curricular classifications which are subdivided into five scales. This is meant to be an all-inclusive and mutually exclusive category system, i.e., everything that can occur in a preschool classroom is included, and included only once.

C1 Protocol for category entries for observation of individual child on five scales directed variously at order of activity, teacher-child relation, child and teacher. Entries are to be made once every thirty seconds on all five scales. Child ratings will be made on a previously designated child. Teacher ratings will be made on teacher who is attending to child at time of observation. If several adults interact with child, then they are all included at the appropriate time. This is not meant to be a record of any one teacher's or aide's behaviour, but rather of the behaviours of any adults that come in contact with the child. This then becomes a sample of the behaviours of all teachers with all children.

C2 This protocol includes four scales which ask for the recording of the presence of teacher-child and child-child attention and communication interactions within fifteen second intervals. A distinction is made between attention and verbal communication.

C3 Protocol for rating interaction of adult with child during ten minute period. If more than one adult interacts with child, rate the

PS 001252

adult who has attended to him the longest. If several adults have interacted equally, take the first one. Checks can be entered in appropriate cells whenever given behaviour occurs or does not occur, and the summary rating can be made at the end of ten minute interval. Ratings are made after every ten minute observation of child.

D1 Coding sheet for C1. Includes categories within scales. All scales range between 1 and 5 except scale number 5, which includes an 0 entry for the situation when no teacher is attending to or ignoring the child in a given time interval.

D2 Description of scales in C2.

Except for C3, all entries are made consecutively at prescribed intervals, throughout stipulated time periods. This means that observers will have to be quite fluent with scales, categories, notation and the range of values of each scale. Once this fluency is obtained, the observer will be able to fully attend to class, teachers and children or child, without continually referring back to coding sheets. Movies can provide an excellent way of gaining fluency, except for the classroom use of the curriculum protocol. A library of ten-minute sequences on individual children has been developed in order to train observers and obtain rater agreement data.

INSTRUCTION FOR MAKING ENTRIES INTO CURRICULUM PROTOCOL FOR 20 MINUTE OBSERVATIONS OF CLASSES (see pp. 15-18)

Five unit entries are to be made at approximately every two and one half minutes, or two entries each five minutes. Activities that take under two minutes are excluded. Periods of rapid change are recorded partially by putting X's into unscoreable categories. For example, if a child switches activities for four or five minutes, entries are made where they reflect behaviour that lasts over two minutes. X's are entered where rapid changes do not permit a single entry for the

interval. If a child is switching on all categories, the recording would be five X's. If he is fairly constant in any one, it would be coded and the others would be X's.

Observer continues to make entries at two and one half minute intervals throughout designated time period. Each protocol covers twenty minutes. If an observer stays for three hours in a class, he can fill out nine protocols, or, if ten minutes is taken between each protocol, he can fill out six protocols, two hours of recording, in a three hour period.

Key B is a category system to be used for making entries into the curriculum protocol (A).

Each entry will consist of five units which can be made alphabetically or numerically. The numerical will be easier for punching cards, but the alphabetic system may be easier for the observer-recorder, particularly during the training period.

A five unit entry will be made for each activity that goes on for over two minutes and less than three minutes. If an activity goes on for over three minutes, then it is recorded again with appropriate changes, including a change in scale 5, from I to C. When an activity terminates, the last entry for scale 5 will be a T.

An entry will be made in a given time interval for every separate activity going on, no matter how many children are involved. Therefore, the number of entries can be equal to the number of children if all children are engaged in separate activities. If a number of children are doing substantially the same thing, but not in a group (either completely separately or a parallel play or activity), then it is only necessary to make one five unit entry and put a circled number underneath it, indicating the number of children involved. Entries will be made in columns indicating sequential time intervals, and in rows indicating the num-

ber of children involved in an activity. Note that there is very little space allotted to Total Class because there can be only one entry there, and there is much more space allotted to Individual and Diads and Triads because there can be numerous entries and more space may be needed. Thus, in any one column there can be as few as one entry (if the total group is involved) and as many as the number of children in attendance (if each child is doing something different).

Note that there are five columns in each two and one half minute time segment. The five spaces for any given activity will be filled with five values corresponding to the five numbered columns of B. The first unit of each entry will be one of the primary categories from column 1 of B. Thus the observer will have to select a most appropriate primary category (Co or Pe or Py or Un or Sc or Qu or La or So or Sn or Cu or Re) depending on what is going on for a particular individual or group. (It is not necessary to code curricular classification [column 0] as we can do that later. This column is for the logical convenience of the observer so that he can focus on the most appropriate primary because of the logical operational focus of the curricular classification. Note that primaries are numbered from 1 to 11, 1 to 3 being under Activity focus, 4 to 7 being under Substantitive focus, and 8 to 11 being under Routines. I have added an 0 under Activity focus because of the likelihood that some children will be wandering around and it will not be possible for the observer to stipulate a primary.)

For each primary, respectively, there are corresponding secondaries. For Activity focus each primary has unique secondaries. For Substantive focus (II) the secondaries cut across all primaries. Therefore, for II, each primary is rated Tx or De or Ex. (This is preferable to having unique secondaries for each primary, as it permits cross tabulation across primaries.)

Process focus, control and sequence (columns 3, 4 and 5) all cut across primary-secondary entries. Thus, no matter what the primary or secondary, a category of process (Co or So or Me or Na), and a category of control (A or M or P), and a

category of sequence (I or C or T) must be selected and entered into an appropriate cell.

Now to give a few examples. If a group of three children are with a teacher constructing wooden boats, under the direction of the teacher, where the purpose is to construct the boats and teach the children to use simple tools, and this activity has been going on for over three minutes, then the coding would be: Co/Fu/Sk/P/C. From this entry it follows that the activity is activity focused, the activity being construction, the secondary designation being functional, the process focus being skill, the control being with the teacher and the sequence being continuing. The entry would be made in the second row (from the top).

If a child were wandering around picking fights with other children without supervision from a teacher, and if this activity persisted for at least two minutes, then the entry to be made when this began (for the first two minutes) would be Un/In/So/A/I. The entry would be made in the first row as the child is acting individually.

If the total class is listening to a story read by the teacher where the story is an end in itself, and there is no elaboration, and it is in its last two minutes, then the entry is made in the bottom row and is Pe/Dp/Me/P/T.

On the other hand, if there is an obvious attempt on the part of the teacher to elaborate the story, explain vocabulary, question the children on what is happening, then the entry is La/De/Co/P/T.

For convenience we will refer to scales by curricular classification number (a Roman numeral) and the column number. Thus, II-3 is the process focus scale under substantitive focus.

All scales under column 1 are strictly nominal - there is no implied ordering. Scales under column 2 are nominal except for II-2, where there is an ordinal hierarchy. The value recorded (or the coded alphabetical symbol) should be the

"highest" observed during the time interval. There is an implied order in III-2, elaborative being a higher level than functional. Again, the highest level is dominant, and if it takes place during the interval it should be so coded.

Process focus scale is partially ordinal, in the following order, from lowest to highest, in parenthetic clusters: (Me); (Sk, Pe); (Co, So). Thus, if manipulative skill training is present, but there is also a noticeable amount of attention to co-operation and sharing, then the higher level (So) would be entered. In order for the higher level activity to be entered, it must be more than a passing remark, question or answer. It has to be sustained and children must be responsive.

Control scale (column 4) is clearly ordered. Assigned value should reflect dominant influence on activity, not simply presence or absence.

Sequence (column 5) is a simple sequential scale.

The bottom row of the protocol has space for entering attendance during each interval. If children stagger in during the first hour, this will change during each time interval. Attendance includes all children present during the given interval, no matter what they are doing or where they are doing it, just so long as they are a part of the class.

In the row labelled Adults, record number of adults with class during each time interval.

The principal problem of this procedure will be for highly differentiated classes where many children are functioning individually or in diads and triads. This will be particularly troublesome when there is more than one room or when a lot of the activity takes place in a large outside area. IN SOME CASES WE MAY NEED TWO OBSERVERS, dividing up the area, so that they can give justice to individual and small group activity.

INSTRUCTIONS FOR MAKING ENTRIES INTO CURRICULUM PROTOCOL FOR TEN MINUTE OBSERVATIONS OF INDIVIDUAL CHILD USING CURRICULUM PROTOCOL (A) (see pp. 15-18)

The same protocol as is used to describe the curriculum of the class is used to describe the curricular activities of a child at the same time that scales C1, C2 and C3 are being used. Rather than asking what is going on in the class, this calls for asking what kind of activity, with whom, and when, is the individual child involved. Thus, if the child is engaged in an activity with four other children, it will be entered in the third row (from the top). When using the protocol in this way, there will only be one entry per column (or time interval) as the child cannot be in a group and functioning individually at the same time. However, the organization of the class into group or individual activities can be noted with checks in appropriate cells.

The observer can elaborate on the protocol, underneath the entry, in order to provide more detail.

As with the classroom use of this protocol, the number of children in attendance and the number of adults working with children should be recorded in each time interval.

The time interval of ten minutes is an educated guess. This means that we can observe approximately four or five children per hour, leaving some time for switching children, note taking and completing ratings. If observer stays the whole three hour period, he can get three ten minute recordings on each of four or five children. We can vary the length of time interval, the number of times we observe a given child in a day (and consequently the number of children that are observed in a day). The important point here is that whatever the interval, we should always get two or three separate time intervals on each child selected in a given day.

INSTRUCTIONS FOR RECORDING BEHAVIOURAL CATEGORIES FOR TEN MINUTE OBSERVATIONS OF INDIVIDUAL CHILDREN (C1 and D1) (see pp. 19, 21)

Five scales, each with five categories (with one exception, 5) are to be used in making entries every thirty seconds for ten minute periods. Again, the selection of thirty second intervals is an educated guess. We will see how it works and reduce it or expand it accordingly. All scales are ordinal with categories that are not meant to be all inclusive, but are mutually exclusive.

The control scale is directed to the source of initiating and terminating activity, and also to the dynamics of the continuing activity (the sequence scale, 1). Essentially, it asks the question of choice. If the child is in the midst of an activity and is being directed, corrected and helped by the teacher, then the recorded value would be 1 or 2. If the child is a part of the decision process, or if he is allowed to proceed without too much assistance, then the value would be 4 or 5. A + or a - sign in the lower right hand triangle of each cell will indicate the observer's judgment of the appropriateness of the control.

The participation scale (3) focuses on the involvement of the child in whatever he is doing, whether it be desirable or undesirable behaviour. This scale asks questions of both intensity and direction. Therefore, it is clear that "activity" must be defined during each time interval. For a very active child it may be, at times, difficult to determine which end of the scale to place him. The question is whether a child can reject an activity that he has initiated and which he is continuing to control.

In order to get out of this bind, we have included Behaviour of child (4), which requires no activity antecedent, but is simply a question of intensity.

Teacher style (5) refers to the style with which the relevant adult (teacher) controls and reinforces (or inhibits) behaviour, or at least attempts to. There is an important distinction between 0 and 3. In 3 the child is being attended

to, but there is little or no apparent response. 0 implies that the child is outside of the teacher's field of attention (and possibly vision).

INSTRUCTIONS FOR RECORDING PROTOCOL FOR SELECTED TIME VARIABLES (C2) (see pp. 19, 22)

Entries in scales 6, 7 and 8 are straightforward recordings of the presence and direction of teacher-child and child-child interactions that take place in fifteen-second intervals. Scales 6, 7, 8 and 9 are related in that attention is generic to verbal communication. Both can take place when the child is functioning individually (with regards to peers) or in a group. When the teacher talks to the group, without reference to the child, and without specific response by the child, it is scored 0. Similarly, attention must involve the child, in particular, or else it is scored 0.

Scales 8 and 9, communication child-child and attention child-child, refers to conversation and non-verbal communication between child and one or more peers, where there is mutual responsiveness.

INSTRUCTIONS FOR RECORDING PROTOCOL FOR RATING TEACHER BEHAVIOURAL STYLE (C3) (see p. 20)

A rating on each of seven characteristics is to be made at the conclusion of each ten-minute observation of an individual child. The "teacher" here is the teacher, aide, volunteer or student teacher, who has had most contact with the child, either while the child is in a group situation, or when he is alone with the teacher. If several adults have contact with the child, rate the adult who has the longest contact in the ten minute interval. If several adults have equal time, then rate only the first one. If no adult has had any contact with the child, or if the contact has been superficial and of extremely short duration (less than ten seconds), then score it as not applicable (0).

As a matter of procedure, the observer should make checks under 1, 2 or 3 in each of the categories whenever there is contact, according to whether the contact is an example of the category behaviour, or whether the behaviour is not apparent.

The purpose of these scales is to get at behaviours that are obviously important, but which are not easily categorized and recorded. We are primarily asking the question of presence or absence, but we have inserted an intermediary point because of the likelihood that there will be ambiguity. Values of 3 and 1 are clear indications that the behaviour has been shown or not. The behaviour does not have to be sustained over the ten minute interval, but it has to be clearly present, and a part of the teacher's behaviour, vis-a-vis the children or child, in order to be scored. These scales can be just as readily scored if the child is in a group for the interval as if he is in a one to one situation with the teacher for all or part of the interval.

Since potentially each scale can be represented by a bipolar continuous scale, each rating will consist of two poles plus an intermediary value. For example, when rating humour, the first question is whether the teacher displays humour in her dealings with the child or the group that the child is in, for all or part of the ten minutes. If the answer is no, then the teacher is rated 1. If yes, then the question is asked as to whether it is occasional and somewhat ambiguous, in which case the rating is 2. If the display of humour through facial expressions, words or laughing is obvious (although not necessarily continuous), that is, if it takes place in more than a fleeting instant, it is recorded as 3. If the teacher has no opportunity to display humour or not to display humour, then the rating is 0, which stands for not applicable.

Curriculum Protocol for 20 minute observation of Class (or individual child in class) (A)

Date _____ Head Teacher _____

Name of Center _____ Child _____

	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
No. of children in activity								
Individuals (1)								
Groups Diads & Triads (2)								
Groups of 25-50% of Class (3)								
Groups of 50-75% of Class (4)								
Total Class (5)								
Attend (6)								
Adults (7)								
Time (8)	5		10		15		20	

Key for scoring classroom and child Curriculum Protocol (B)

B

0	1	2	3	4	5
Curricular Classification (Not to be coded)	Substantive or activity Category		Process Focus	Control (with regard to child)	Sequence
	Primary	Secondary			
I Activity focus (Ac) (Focused on activity rather than substantive content)	Co: Construction (01) (Wood, paper, clay, blocks, painting, collage, cooking, etc.)	Ae: Aesthetic (1) Fu: Functional (2)	Me: Mechanistic routine (1)	P: Passive Teacher dominated (1)	I: Initial (1)
	Pe: Performing (or being performed to) (02) (Music, role playing, puppets, television, house-keeping, games, etc.)	Mu: Music (1) Dp: Dramatic play (2) Ga: Games (3)	Sk: Skill Manipulative (2) Pe: Perceptual (3)	M: Mediated Control between child and Teacher (2)	C: Continuing (2)
	Py: Play (03) (Water, sand, clay. Swings, slides, jungle-jims)	Sm: Small Muscle (1) Lm: Large Muscle (2) Cx: Complex (3)	Co: Cognitive Language (4) So: Social emotional (5)	A: Active Child dominated (3)	T: Terminal (3)
	Un: Undefined (Wandering) (00)	Ex: Exploring (1) In: Interacting (2) No: No definition (0)	Na: Not applicable (0)		

0 - Not defined, not applicable.

B

Key for scoring classroom and child Curriculum Protocol (B contd.)

0	1	2	3	4	5
Curricular Classification (Not to be coded)	Substantive or activity Category		Process Focus	Control (with regard to child)	Sequence
	Primary	Secondary			
II Substantive (Su) (Focus on substantive content rather than activity)	Sc: Science (04) (Biology, physics, chemistry, botany, zoology)	Tx: Textual (1) (Labelling, memorizing, discriminations)	Me: Mechanistic, routine (1)	P: Passive Teacher dominated (1)	I: Initial (1)
			Sk: Skill Manipulative (2)		
	Qu: Quantitative (05) (Numbers, sizes, shapes, puzzles)	De: Demonstration (2) (experimental, implications)	Pe: Perceptual (3)	M: Mediated Control between child and Teacher (2)	C: Continuing (2)
	La: Language, Verbal (06) (Speech, discussion, stories, writing, reading)		Co: Cognitive, Language (4)		
	So: Social relations (06) (Interpersonal relations, culture, social organization, history, government, community)	Ex: Experimental (3) (Direct involvement, transformations)	So: Social emotional (5)	A: Active Child dominated (3)	T: Terminal (3)
			Na: Not applicable (0)		

0 - Not defined, not applicable.

B

Key for scoring classroom and child Curriculum Protocol (B contd.)

0	1	2	3	4	5
Curricular Classification (Not to be coded)	Substantive or activity Category		Process Focus	Control (with regard to child)	Sequence
	Primary	Secondary			
III Routines (Ro)	Sn: Snacks (08) (Juice, lunch)	Fu: Functional (1)	Me: Mechanistic routine (1)	P: Passive Teacher dominated (1)	I: Initial (1)
	Cu: Clean Up (09)		Sk: Skill Manipulative (3)		
	Re: Rest (10)		Pe: Perceptual (3)	M: Mediated Control between child and Teacher (2)	C: Continuing (2)
	O: Other (11) (Arrival, departure, toileting, washing, dressing)	El: Elaborative (2)	Co: Cognitive Language (4)		
			So: Social emotional (5)	A: Active Child dominated (3)	T: Terminal (3)
			Na: Not applicable (0)		

0 - Not defined, not applicable.

Mo. day yr. cl. ch. obs fm

Name of Child _____ Head Teacher _____

Name of Teacher _____ Name of Center _____

Time of day _____ Name of Observer _____ Matched yes _____ no _____

Behavioural and Time Variables Protocol

		Category	10 minutes - 15 and 30 second intervals: 1 2 3 4 5 6 7 8 9 10
C1	1	Sequence (I-C-T)	
	2	Control (1-5) T-Ch	
	3	Participation (1-5) Ch	
	4	Behavior (1-5) Ch	
	5	Style (0-5) T	
C2	6	Attention: T-Ch Direction	
	7	Communication: T-Ch Direction	
	8	Attention: Ch-Ch Direction	
	9	Communication: Ch-Ch Direction	

C3

Date _____
Mo. Day Yr.

Name of Child _____ Head Teacher _____

Name of Teacher _____ Name of H.S. Center _____

	Category	Rating: Not applicable (0)	Rarely or never (1)	Occasional, Intermittent (2)	Obvious and sustained (3)
1	Display of humour				
2	Warmth towards child(ren)				
3	Resourceful presentation of material with/without planning				
4	Spontaneity of presentation, on-the-spot flexibility in use of materials & language				
5	Direct encouragement of verbal responses in child(ren)				
6	Behaviour indicative of being happy with and enjoying teaching situation				
7	Shows respect for children by maintaining single standard in language and givingreasons for actions				

<u>Teacher Protocol for rating Teacher Behavioural</u> Style during 10 minute observation of individual child - rate only the adult who has contact with observed child. If several adults have equal contact, rate only the first one. Not applicable refers to no contact. (To be administered for each ten minute observation of individual child.)

(<u>C3</u>)

Category Scales for Time Sampling of Individual Child Classroom Behaviour (D1)

1. Sequence of behaviour: I - initial; C - continuing; T - terminal

2. Control of activity

Teacher Direction and insistence	Teacher Suggestion	Teacher Presents Alternatives	Teacher Child Collaboration	Child Controlled
1	2	3	4	5

3. Participation of child in activity

Rejection	Reluctance	Indifference	Moderate Involvement	Intense Involvement, absorption
1	2	3	4	5

4. Behaviour of child

Passive Non-responsive	Compliant Participation	Active Exploratory	Verbally Aggressive	Physically Aggressive
1	2	3	4	5

5. Teacher style of approaching, directing and responding to child (T)

Not attending to activity or task in any way	Severely punitive, physical	Verbal punitive, sarcasm, intimidation, ridicule, threat, coercion	Permissive, attending to but non-committal, uninvolved	Enabling, reassurance, encouragement, constructive, criticism	Unequivocal and indiscriminate support, over indulgence
0	1	2	3	4	5

Scales for Time Sampling of Individual Child Classroom Behaviour (D2)

6. Attention: Teacher to Child (——→) and Child to Teacher (←——) and two-way interaction (←——→)

7. Verbal communication: same as #6.

8. Attention: Child - Child

9. Verbal communication: Child - Child.

(Presence [V] or absence [0] to be scored every 15 seconds.)

E & ER Observation of Classes
Time Allotments

The following chart gives an estimate of the sample:

	E	ER	Total
No. of Children:	75-100	45-60	120-160
No. of Classes:	5-10	4-8	9-18
Mean No. of Classes	8	6	14
Mean No. of Children/ Class	10	10	140

Time allotment: 30 hours/class with two observers or
60 observational hours/class equals total of 840.

Time Allotment for Curriculum Period

Three 3 hour observations/class equals 9 observation hours/class
(assuming 14 classes) 9 x 14 equals 126
Extra observers for highly differentiated classes 30
156

Time Allotment for Individual Child Observation

3 hours/child overall (140 children) (756)
2 hours/child overall 504
1 hour/child overall (252)
Training and exploratory observation 180
840

Observation of individual children will take more days than observation of class. Suggested guideline: Each child should be observed on at least one cycle (three 10 minute intervals in a single day) concurrently with observation of class (Curriculum Protocol); this would leave three cycles which would take place without concurrent administration of curriculum protocol.

Time for Individual Child Observation

Options on total time, assuming a 3 hour observation period, will net two hours of protocol time per day (four 1/2 hour observations per day).

Total net time each child is observed in hours	No. of cycles	No. of 10 min. observations 3/cycle	Total hours for sample, assuming an average of 14 classes, 140 children
1	2	6	252
2*	4*	12*	504*
3	6	18	756

*Recommended

Model for each class (assuming 12 children from class in sample)

		Cycles - Days					
		1	2	3	4	5	6
Sub Samples:	A	4	4	4	4	4	4
	B	4	4	4	4	4	4
	C	4	4	4	4	4	4

Two cycles will give one hour of observation per child in ten minute intervals, in two separate days.

Four cycles will give two hours of observation per child.

Six cycles will give three hours of observation per child.

Each cycle will take three 3 hours per day or 9 observer hours per class.

Total time for completing is 9 X number of cycles x number of classes.

Observation of individual children will be rotated as follows: four children out of the sample in a given class will be selected for a given day's (3 hours) observation. Children will be assigned numbers and the four will be selected from the sample in the class. There are several possible procedures:

1. The four can be rotated in straightforward fashion for the three hours - 1, 2, 3, 4; 1, 2, 3, 4; 1, 2, 3, 4 - four children to be observed in an hour leaves 20 minutes per hour for finding next child, completing protocols, etc. This can roughly be spaced as follows: 10,5,10,5,10,5,10,5 equals 60 minutes.

2. The sample in each class can be randomly assigned to observation periods and observation would continue until each child had been observed for a given amount of time. Using this procedure, it would be possible for a child to be observed 0 to 12 times on a given day.

Method #1 is procedurally easier, but method #2 is theoretically more sound, as it eliminates bias due to observation dependency. Method #2 would give unbiased estimates of child-peer-teacher activity interaction; therefore, it would be more defensible to accumulate ratings for children in a given class in order to get measures of total class functioning.

It would further strengthen the possibilities for inference if days for observation were selected using a random or stratified random procedure. It would seem that since the number of classes per center will be modest, it might be reasonable to do it in this way.

Ideally the procedure would go as follows:

A sample of class days would be randomly selected from all possible class days, stratifying on beginning (Monday), middle (Tuesday, Wednesday, Thursday) and end (Friday) of week and probably ignoring vacation and party days (either eliminate them entirely or take no cognizance of them and include them as they are selected). Trip days can either be eliminated entirely or included as they come up. The latter is theoretically preferable, but might present practical problems. Data from classes that include trips as a major part of their program would be biased. The individual child scales have been constructed so that they can be used for any activity that may be going on. The decision to include or exclude trip days should be made after the explanatory observation. Other considerations might also come up at that time.

Exploratory Observation and Training

One hundred eighty hours are to be used for exploratory observation and training, to be divided up 30 and 150. Exploratory observation is for the purpose of getting preliminary data that can be used in:

1. Sample selection
2. Determination of stratification variables.
3. Determination of restrictions and exclusions.

If the sample of available classes is considerably larger than 14, it might be necessary to do preliminary observation in order to obtain the 14 classes to be used in the sample. This depends on between class variability that is desirable for the final sample of classes.

In order to set up an overall observational schedule, it will be necessary to observe each of the 14 classes on two separate occasions for approximately 45 minutes each, one observation to be in the first half of the school day, the other to be in the second half. This will provide information both from observation and interviewing the teacher on the following:

1. Overall schedule of class, intra and inter day variability, trips, expected attendance, days when observation would not be feasible, classroom organization, etc.
2. Amount of differentiation (as opposed to total or small group) in class.
3. Feasibility of having more than one observer in the room at a time. (Probably the more highly differentiated classes, which might require more than one observer for the curriculum protocol, will be the classes that can most reasonably be expected to be able to have more observers without interrupting the program).

It is estimated that this will involve a net of two hours which can be done by two observers in a week as follows:

Observers	M	T	W	Thurs.	Fri.
A	1,2,3	4,5,6	7,8,9	10,11,12	13,14
B	7,8,9	1,2,3	13,14	4,5,6	10,11,12

Class numbers are inserted in cells.

Including travel time, this will gross out at 30 hours.

Alternatively, each observer can visit seven classes, each twice, which will give the same net and gross hours, but which may be more practical, because on the second visit, the observer will already be familiar with the setting. The first procedure has the advantage of observation on each class by different observers.

This leaves 150 hours for training observers.

Selection of Observers

It is expected that individuals with experience and training in the education of pre-school children will be included in the team of observers. This is not to say that it is necessary (or even desirable) that all observers have such training and experience, but that pre-school education and experience will be represented.

Utilizing films, all observers can be screened on their ability to record accurately curricular and behavioural sequences. Although much has been done in the development of this observational strategy to reduce observer effects, it will be necessary to continually quality control the process by using films and two-way observational set-ups where many observers can rate the same activity.

Analysis of Data

Characteristic curves of classes and clusters of classes in terms of differentiation (vertical axis of curriculum protocol, A) X time (horizontal axis of curriculum protocol), will be mapped. These curves can be compared with reference to control (B-4 and D1-2), process focus (B-3), participation (D1-3) and teacher style (D1-5) across curricular classifications (B-0) and primary and secondary substantitive or activity categories (B-1 and B-2).

By utilizing curve fitting methodologies and, possibly, multiple discriminant function analysis, maximally different functions can be calculated and described in order to set up hypotheses about goals that can be inferred from observational data - that is, goals that are assumed to exist because of what goes on in the class. In more straightforward terms, this analysis will develop specific predictions for single children, classes and clusters of classes regarding probabl effects of various kinds of programs on children. The first question to be attended to is, if a given class (or cluster of classes) is affecting children, what kind and degree of effects are most likely? It may be that, for some of the clusters, we will not have measurements suitable for obtaining data on behaviours that appear to have the most possibility of changing. It will be possible to make probability estimates that any given class, when compared to any other class, whill show child changes in particular areas. The categories used for the curriculum protocol (B) will provide a basis for connecting classroom procedures with individual child behaviours. Control (D1-2), participation (D1-3) and teacher style (D1-5) will provide data on how curriculum is presented and how it is received, thus allowing for inferences about not only what is being presented to the child, but how it is expressed and how it is received.

Observational recordings can be used for obtaining individual child measures as well as class measures. When a prediction about change is made for a given class, it can be mediated by the data obtained on individuals in that class. Thus, we will not have to rely on global predictions exclusively. The hypothesis that a child who has been exposed to a considerable amount of a particular kind of cognitive content will change cognitively will be mediated (different hypotheses for different children or clusters of children) by variables of the behaviour protocols (C1 and C2).

Time variables (C-2 and D-2) provide quantitative data on an aspect of participation (C1-3 and D1-3), and also an aspect of curriculum (B-3-4 and BII-1-6).

For any given curriculum, the time variables will provide verification or rejection of the observed goals, in terms of particular children.

The teacher protocol (C3) consists of seven scales, the data on which will be analyzed separately, in order to isolate two or three factors. Resulting factor scores on teachers will be used to further mediate the evaluation of attention as it applies to children. We have already discussed the questions of how, both for the teacher and for the child. For given how-how interactions, we ask whether there is corresponding systematic variation on certain aspects of judged teacher style. The aim of these analyses is to explore the question: what kind of teacher (or teaching) will get what kind of attention? The "kind of teacher" (or "teaching") is gotten at by the teacher protocol (C3) and also by D1-2, D1-5 and, more generally, from the curriculum protocol (A and B). "Kind of attention" is explored in participation (D1-3), behaviour (D1-4) and the time variables (C2 and D2).